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University of Pittsburgh

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# The Emergence of Retroflexion in Somali Bantu Kizigua: Internal Motivation or Contact-Induced Change?

Holman Tse

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# ABSTRACT

This paper provides an analysis of how a set of three retroflex stops historically emerged in Somali Bantu Kizigua. The stops include a retroflex implosive, a voiced retroflex pre-nasalized stop, and a voiceless retroflex pre-nasalized stop. Primary sources of data include missionary texts from the late 19th and early 20th Centuries as well as more recently collected data from consultant work. Diachronic comparison of the data suggests that retroflexion developed some time after a group of Kizigua speakers from Tanzania migrated to Somalia in the 19th Century. In accounting for the emergence of these stops, this paper considers both internal and external motivation. A review of the literature on retroflexion, however, shows no known reason to account for why a language would independently develop retroflex pre-nasalized stops, although there is precedence for retroflex implosives. Much stronger evidence is available to support an account based on external motivation. The history of Kizigua speakers suggests that migration from Tanzania to Somalia followed by the subsequent establishment of the maroon community of Gosha created social conditions that facilitated contact with speakers of other languages including Chimwiini, a genetically related Bantu language that contains retroflex stops. I argue that Chimwiini was the most influential language due to both its lingua franca status and its genetic relatedness. I also argue that transfer of retroflexion from Chimwiini to Kizigua involved a two-part process of language shift and that shift-induced interference rather than borrowing (following Thomason & Kaufman's 1988 distinction) better account for the diachronic data. The implication of genetic relatedness is that there is a high degree of both lexical and phonological similarity between the two languages. This would have facilitated a set of externally motivated changes in a patterned way resulting in an outcome that appears similar to one expected due to internal motivation. This paper contributes to the literature in socio-historical and contact linguistics by accounting for a typologically unusual sound change that has not been previously described and by discussing an under-researched historical case of migration and language in a pre-colonial context.

# The Emergence of Retroflexion in Somali Bantu Kizigua: Internal Motivation or Contact-Induced Change?

**By Holman Tse**
**University of Pittsburgh**
**Department of Linguistics**

## 1. Introduction

This paper addresses the diachronic development of retroflexion in Somali Bantu[1] Kizigua[2] (henceforth abbreviated as "SBK"), an under-documented and possibly endangered dialect of the Zigua[3] language from Tanzania. SBK diverged from Tanzanian Zigua (henceforth abbreviated as "TZ") following the forced migration of some members of the Zigua tribe, who were taken to Somalia[4] in the 19th Century to work as slaves. As illustrated in Table 1 below, SBK has three retroflex stops including a retroflex implosive, /ɗ/, a voiceless prenasalized retroflex stop, /nʈ/, and a voiced prenasalized retroflex stop, /nɖ/. These three sounds emerged as part of three sound changes that occurred across-the-board in basic vocabulary inherited from TZ. While this highly systematic pattern suggests internal motivation, this paper will instead argue that all three sound changes emerged as a result of contact-induced change and that what gives the surface appearance of internally motivated change is shift-induced interference from a genetically related language that shares a high degree of both lexical and phonological similarity.

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[1] See Besteman (2012) for a critical discussion of the ethnic term "Somali Bantu". Nurse (2010) has used the term in

[2] Although the native name is actually Chizigula, speakers frequently use the Swahili name Kizigua when referring to their language. According to a web search conducted by the author, "Kizigua" is the most common spelling used for websites created by members of the Somali Bantu community. Some sources have also used the Somali name "Mushungulu" or "Mushunguli".

[3] For reference, Tanzanian Zigu(l)a has been classified as G.31 by Bantu linguists (Guthrie 1967). A more recent classification has given SBK (Mushungulu) a separate code, G.311 (Maho 2009).

[4] Tanzania and Somalia did not exist as political entities in the 19th Century. Thus, all references to African country names in this paper refer to their present-day location.

***Table 1: Examples of Coronal Stop Contrasts***

| **Sound**[5] | **TZ**[6] | **SBK** | **Sound Change** | **Gloss** |
|---|---|---|---|---|
| t | ma**t**unda | ma**t**unɖa | -- | 'fruits' (pl) |
| ɖ | ma**d**udu | ma**ɖ**uɖu | d > ɖ | 'bugs' (pl) |
| nʈ | wa**nt**u | wa**nʈ**u | nt > nʈ | 'people' (pl) |
| nt | -- | hara**nt**i | -- | 'courtyard' |
| nɖ | -nku**nd**u | -hu**nɖ**u | nd > nɖ | 'red' |
| nd | -- | **nd**oni | -- | 'boat' |

In developing an account based on contact-induced change, this paper adopts the framework established by Thomason and Kaufman (1988) who argue that external factors are always primary. This is the reverse of the traditional historical linguistics approach, which leans more strongly in favor of seeking internal over external causes for change. As Thomason and Kaufman have said, "the history of a language is a function of its speakers, and not an independent phenomenon that can be thoroughly studied without reference to the social context in which it is embedded" (1988:4). What makes the SBK data intriguing is the typological unusualness of the sound changes observed. The regularity and the across-the-board effect of these changes make them appear to be the result of internal motivation. Yet, if internal motivation really were the case, there would need to be a phonetically grounded reason to account for these changes. No previous research, however, has shown phonetic motivation in the diachronic retraction of /nt/ and /nd/[7], although some research has shown phonetic motivation in the development of /ɖ/ in other languages, as will be discussed in Section 3.

Given the history of migration involved, contact seems to be the most obvious explanation since areal linguistics research has shown more languages with retroflex stops in Somalia than in Tanzania. Yet, what may be less obvious is how contact could have triggered

[5] IPA symbols are used throughout this paper with the exception of prenasalized stops, which will follow the Africanist tradition of using /m/ or /n/ followed by the appropriate symbol showing the place of articulation. All prenasalized stops are assumed to be homorganic.
[6] The 19th Century and early 21st Century forms are identical in this set of words.
[7] Nurse and Hinnebusch's (1993) discussion of *nd retroflexion is a notable exception that is arguably triggered by a separate contact-induced change. This will be discussed in Section 3.

across-the-board sound changes restricted to inherited vocabulary. The account presented in this paper is a complicated one yet it reflects the complex socio-historical reality of 19th Century East Africa.

The Zigua were only one of several Bantu-speaking slave groups brought to Somalia from points south. Unlike other groups, however, the Zigua maintained their language while others such as the Yao, the Makua, the Ngindo, and the Nyasa lost their languages over time. This paper will argue that the non-Zigua slave groups played a major role in introducing retroflexion to Kizigua through a complicated two-step process of language shift. The first step was shift from other Bantu languages to Chimwiini, a lingua franca spoken in and around the port city of Brava, the arrival point for many of the imported slaves. Chimwiini, as well as many of the indigenous Bantu languages historically spoken in Southern Somalia, contains retroflex stops. After these non-Zigua slaves escaped from their masters, they fled to Gosha, a maroon community of fugitive slaves in the Juba River area of Southern Somalia, where they settled down and interacted with former Zigua slaves. The second step would have been language shift from Chimwiini to Kizigua. Given the structural similarity between these two languages, Kizigua would have been relatively simple for adult Chimwiini speakers to learn. At the same time, the similarity would have also facilitated transfer of features such as retroflexion in a highly systematic way leading to an outcome that resembles an outcome that would be expected from an internally motivated change. Retroflexion would have then been passed along to subsequent generations of Kizigua speakers.

The structure of this paper will proceed as follows. After presenting a detailed description of the diachronic data (Section 2), an internal motivation hypothesis will be evaluated by reviewing the typological literature on the emergence of retroflexion (Section 3). This review

will show how retroflexion develops more often as a result of contact than as a result of internal motivation. Section 4 will present the socio-historical background while Section 5 will bring this background together with linguistic data to show how retroflexion could have entered Kizigua through contact-induced change. This paper concludes in Section 6 with a summary and a few ideas for future research.

This paper makes two contributions to the literature in socio-historical and contact linguistics. The first contribution is in accounting for a typologically unusual sound change that has not been previously described in detail. An analysis of its emergence in SBK has broader implications for the development of knowledge about what kind of phonological systems are possible and about how they can change and develop over time even if they are the result of contact-induced changes. The second contribution is in discussing an under-researched historical case of migration and language in a pre-colonial context. The unique history of migration involved, which led to language shift in some cases, provides fertile ground for researchers interested in the various outcomes of language contact. Unlike many historic cases of shift, the languages spoken prior to contact did not completely disappear. Thus, we are fortunate to have access to both 19$^{th}$ Century missionary publications and recently collected data from these languages. Although there are still gaps in the data, we have sufficient evidence to build a case for shift-induced interference in phonological change leading to an outcome that resembles a sound change resulting from internally motivated change. The SBK data, thus, presents a unique lens to investigate the problem of internal vs. external factors in sound change in a historic context and how various factors may be able to conspire together in the development of a typologically unusual but systematic inventory of three retroflex stops.

## 2. Diachronic Data on Retroflexion in Kizigua

The linguistic data for this paper comes primarily from a missionary-produced dictionary containing approximately 3,500 words (Kisbey 1906) and consultant work with four speakers from a Somali Bantu refugee community in the Northeastern United States. Data from these four speakers will henceforth be referred to as the "Pitt SBK Data". Other major sources include a dictionary of TZ (Mochiwa 2008) and an online lexicon with accompanying audio recordings of SBK (Odden n.d.). Supplemental sources containing smaller amounts of data were also used. All sources consulted as well as the geographical and temporal varieties of Kizigua represented by each source are summarized in Table 2 below.

***Table 2: Kizigua Data Sources***

| **Time Period Represented** | **Tanzanian** | **Somali** |
|---|---|---|
| 1874-1885 | (Last 1885)[8] | ??? |
| 1890's-1910's | (Kisbey 1897; Kisbey 1906) | ??? |
| 1980's | (Brenzinger 1987; Kenstowicz 1988) | (Crevatin 1993) |
| 2000's- present day | (Mochiwa 2008) | (Odden n.d.), Pitt SBK Data |

The complete consonant inventory of SBK is shown in Table 3 below and was compiled based on a lexicon of approximately 700 words from the Pitt SBK data. This includes all 220 basic vocabulary items listed in Samarin (1967). By identifying corresponding forms in TZ, several sound changes have been identified as indicated in Table 3. Table 4 presents examples of contrasting words found in coronal stops in SBK.

From all of this data, we can see that the three retroflex stops in SBK emerged as a result of three sound changes:

(i) d > ɗ, ɗ > ɖ / _ [V, +back]

[8] Although this is the oldest known source available with data from TZ, it appears to represent a dialect that differs from the one described by Kisbey (1897; 1906). One of the main differences is noun class assignment for some of the words in the basic vocabulary list. The dialect described by Kisbey (1897; 1906), however, appears to be more similar to modern SBK and will be treated as the dialect from which SBK initially developed.

(ii) nt > nʈ

(iii) nd > nɖ

The evidence for each of these changes is presented below along with acoustic data illustrating an alveolar/retroflex contrast absent in TZ.

***Table 3: SBK Consonant Inventory (with Sound Changes in Bold)***

| | | **Labial** | **Labio-dental** | **Coronal** | | **Palatal** | **Velar** | **Uvular** | **Glottal** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | **Alveolar** | **Retroflex** | | | | |
| [-voice] stops | [-nasal] | p | | t | | **k > c / _ i** | k | | |
| | [+nasal] | mp$^{h}$ | | | **nt$^{h}$ > nʈ** | | | **nk$^{h}$ > nq** | |
| [+voice] stops | [-nasal] | **b > ɓ** | | **d > ɗ / _ [V, -bk]** | **d > ɖ / _ [V, +bk]** | **dj, gi, ge> ʄ** | **g > ɠ** | | |
| | [+nasal] | mb | | **(nd)** | **nd > nɖ** | | ŋg | | |
| Fricatives | | | f v | s z | | ʃ | | | h |
| Approximants | | w | | l | | j | | | |
| Nasals | | m | | n | | ɲ | ŋ | | |
| Trills | | | | **l > r** | | | | | |

***Table 4: Examples of Coronal Stop Contrasts***

| **Sound Illustrated**[9] | **TZ** | **SBK** | **Gloss** |
|---|---|---|---|
| t | ma**t**unda | ma**t**unɖa | ‘fruits’ (pl) |
| n + t | -- | hara**nt**i | ‘courtyard’ |
| nʈ | wa**nt**u | wa**nʈ**u | ‘people’ (pl) |
| ɗ / _ [V, -back] | ma**d**ege | ma**ɗ**eʄe | ‘birds’ (pl) |
| ɖ / _ [V, +back] | ma**d**udu | ma**ɖ**uɖu | ‘bugs’ (pl) |
| nd | -- | **nd**eʄe | ‘airplane’ |
| nɖ | -nku**nd**u | -hu**nɖ**u | ‘red’ |

*2.1 Evidence for d > ɗ, ɗ > ɖ / _ [V, +back]*

The first sound change to be discussed is actually a complementary pair of conditioned sound changes that involve a plosive becoming an implosive and an alveolar segment becoming retroflex when preceding back vowels[10]. Given the lack of a contrast between non-prenasalized plosives and implosives both historically and in the present, one may wonder if voiced stops in

[9]For the SBK data, IPA symbols are used throughout this paper except for the retroflex implosive, /ɖ/, which lacks an official IPA symbol, and for the prenasalized stops, which follow the Africanist convention of using /n/ followed by the appropriate stop symbol. While the nasal portion is likely to be homorganic, its actual pronunciation is not crucial to the main point of the paper.

[10] The change from d > ɗ can also be described as part of a more general process in which all plosives in TZ become implosives in SBK. The focus of this paper, however, is on the coronal stops.

Kizigua were actually implosives but not noted as such. All available sources on TZ show the presence of plosives to the exclusion of implosives. This includes Kisbey (1906), which adopted the orthography used by the Society for Promoting Christian Knowledge (Last 1885), Guthrie (1967), which otherwise noted a distinction between plosives and implosives in other Bantu languages but described TZ as having plosives, and Mochiwa (2008), which adopted IPA symbols. In contrast, sources on SBK are unanimous in describing the voiced stops as implosives (Crevatin 1993; Odden n.d.). Thus, the evidence shows that at some point in time, inherited plosives in TZ became implosives in SBK.

Comparison of words from the Pitt SBK Data and words from Kisbey (1906) shows [d] in TZ corresponding to either SBK [ɗ] as in Table 5 or to SBK [ɗ] as in Table 6. The split is one based on the following vowel with [ɗ] preceding back vowels (/u, o, a/) and [ɗ] preceding the other two vowels in SBK (/i, e/). This pattern is essentially an allophonic difference and is one that holds even for loan words such as [ɗunia]. Since there is no phonological contrast between alveolar and retroflex implosives, one could argue that the retroflex variant is simply a phonetic characteristic with no independent phonological status. When placed in the context of the larger coronal stop inventory, however, we can see that the other two retroflex stops in SBK do contrast with alveolar counterparts. The consonant inventory as a whole, thus, motivates an analysis of the language as one containing three retroflex stops.

***Table 5: The Coronal Implosive Preceding Back Vowels***

| **Late 19th Century TZ** | **Early 21st Century TZ** | **SBK** | **Gloss** |
|---|---|---|---|
| kudanta | kudanta | kuɗaɳto | ‘to lie’ |
| dole | dole | ɗole | ‘finger’ |
| -dodo | -dodo | -ɗoɗo | ‘small’ |
| dudu | dudu | ɗuɗu | ‘bug’ |
| -- | -- | miɗuɠali | ‘woods’ (origin unknown) |
| -- | -- | ɗunia | ‘world’ (from Standard Swahili) |
| kudumula | -- | kuɗumula | ‘to cut’ |

***Table 6: The Coronal Implosive Preceding Front Vowels***

| Late 19th Century TZ | Early 21st Century TZ | SBK | Gloss |
|---|---|---|---|
| -edi | -edi | -ɗi | 'good' |
| dihi | -- | ɗihi | 'which' |
| kigudi | cigudi | ciɠuɗi | 'hip' |
| kaidi | -- | kaiɗi | 'two' |
| mdege[11] | dege | ɗeʄe | 'bird' |

*2.2 Evidence for /nt, nd/ > /nʈ, nɖ/*

By identifying words from the Pitt SBK Data with retroflexion and their corresponding forms in TZ, we can clearly see that /nt/ and /nd/ correspond to retroflex sounds in SBK as illustrated in Table 7. In all cases of inherited vocabulary, the /t/ or /d/ is retracted when following a nasal segment. Exceptions to post-nasal retroflexion, in contrast, appear to be limited to non-inherited vocabulary as illustrated in Table 8. Thus, it appears that loan words can contain alveolar [nt] and [nd] while cases of inherited /nt/ and /nd/ all became [nʈ] and [nɖ]. The alveolar [nt] and [nd] have, thus, not been completely eliminated from the language[12]. The overall result of retraction of the prenasalized alveolar stops and the borrowing of new vocabulary with prenasalized alveolar stops is a consonant inventory that includes an alveolar/retroflex contrast that is absent in TZ.

Acoustic evidence of the contrast can be found by comparing the spectrograms and waveforms for the pair [ɓanʈi] 'door' vs. [haranti] 'courtyard' and for the pair [ndoni] 'boat' vs. [ʈonɖo][13] 'star'. As illustrated in Figure 1 for [ɓanʈi], there is no pause between the nasal and the onset of the following stop. The production of the [ʈ] is accompanied by a significant amount of

[11] In this form, the [m] represents a noun class marker and would hence be pronounced as a syllabic bilabial nasal, with [wa-] being the appropriate plural marker for Noun Class 1/2. This is interesting given that the Pitt SBK Data shows this word belonging to Noun Class 5/6, as evidenced in the use of [ma-] for the plural.

[12] Some cases of [nd] would actually be [n] + [d] sequences rather than prenasalized stops as in [bandera]. When occurring in word-initial position, however, such as in [ndeʄe] or [ndoni], [nd] would be a prenasalized stop. The few instances of [nt], however, are [n] + [t] sequences rather than a prenasalized stop.

[13] This should actually be /nʈonɖo/. The initial /n/ is not produced when pronounced in utterance-initial position.

aspiration. There is also a slight lowering of the third formant (F3), which is the most widely agreed upon acoustic correlate of retroflexion (Ladefoged and Maddieson 1996). In contrast, heavy aspiration and retraction are absent for the [nt] in [haranti], a word that is suspected to be a loan. There is also a significant pause between the [n] and [t] as illustrated in Figure 2. It appears that there may actually be a syllable boundary between the /n/ and the /t/ in this word.

***Table 7: nt > nʈ and nd > nɖ in Inherited Vocabulary***

| **Late 19th Century TZ** | **SBK** | **Gloss** |
|---|---|---|
| mntu | mnʈu | 'person' |
| ntondo | nʈonɖo | 'star' |
| ntambo | (mwe)nʈambo | 'traveler' |
| ntembo | nʈembo | 'elephant' |
| banti | ɓanʈi | 'door' |
| ntangulu | nʈaŋgulu | 'basket' |
| vundi | vunɖe | 'cloud' |
| nkonde | honɖe / qonɖe | 'cultivated field' |
| tunda | tunɖa | 'fruit' |
| kindedi | cinɖedi | 'correct' |
| kudanta | kuɖanʈo[14] | 'to lie, to deceive' |
| nkande | hanɖe / qanɖe | 'food' |

***Table 8: The Emergence of [nt] and [nd] in Loan Words***

| **SBK** | **Source** | **Gloss** |
|---|---|---|
| haranti | Origin Unknown | 'courtyard' |
| asante | Standard Swahili: [asante] | 'thank you' |
| bandera | Portuguese: [bandeira] or Italian: [bandiera] | 'flag' |
| ndoni | Somali: [doni] or | 'boat' |
| ndeɖe | Standard Swahili: [ndege] | 'airplane' |
| kuandika | Standard Swahili: [kuandika] | 'to write' |

For the contrast between /nd/ and /nɖ/, spectrograms and waveforms of the words [ndoni] and [ʈonɖo] are shown in Figure 3 and Figure 4 below. [ndoni] is a loan from Somali or another Cushitic language, which seems surprising given that Cushitic languages lack prenasalized stops. The [nd] part of this word turns out to correspond to a non-prenasalized dental stop in Somali. While the waveform of the [nd] in this word looks similar to the waveform for the [nɖ] in

[14] The [o] is not a typo. Nevertheless its occurrence is unusual given the fact that the infinitive form of most verbs in SBK ends with an [a]. The same goes for all the other Bantu languages mentioned in this paper. Why this word ends with an [o] instead of an [a] is a puzlle. It has been noted, however, that verbs in Af-Maay typically end in [o]. Thus, one hypothesis is that the [o] in this word comes from Af-Maay influence.

[tɳdo], there is a slight lowering of the third formant following the [ɖ] in [tɳdo] that is not present for the [d] in [ndoni]. This lowering of the third formant is evidence for retroflexion.

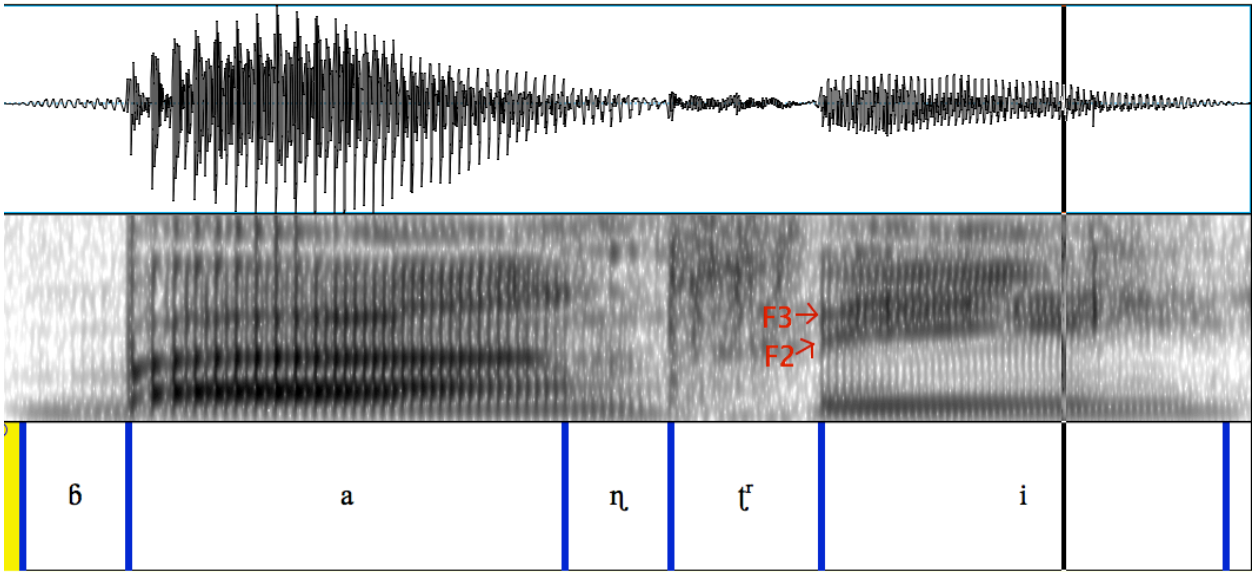
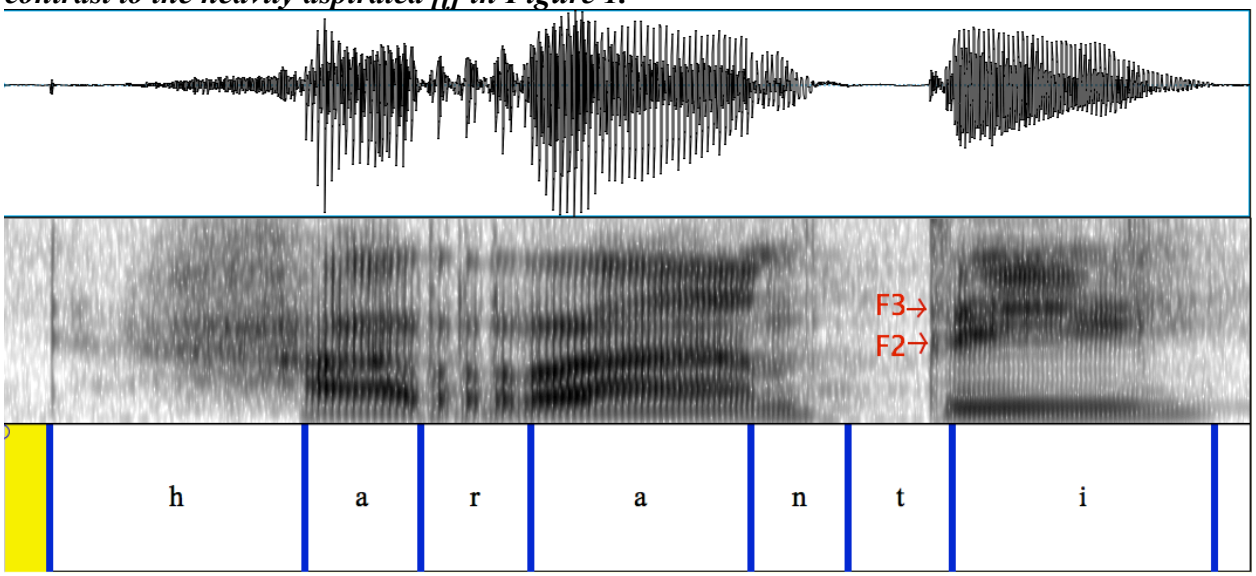



***Figure 1 (above): Waveform and Spectrogram of [ɓanʈi]. Note the aspiration of [ʈ] and slight lowering of F3.***
***Figure 2 (below): Waveform and Spectrogram of [haranti]. Note the short duration of [t] in contrast to the heavily aspirated [ʈ] in Figure 1.***



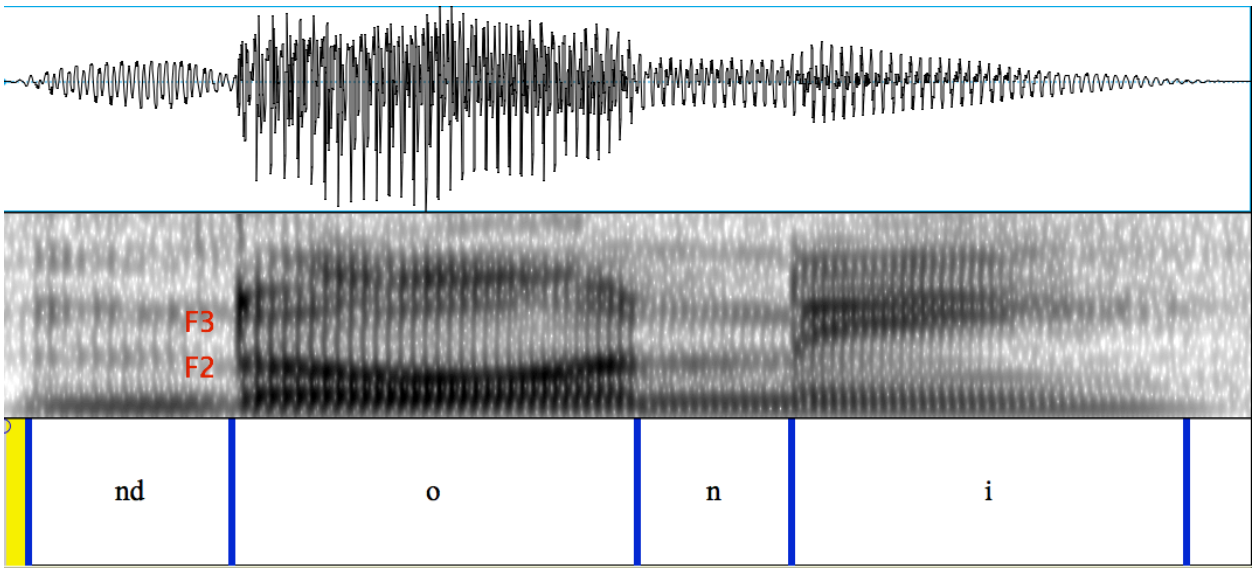
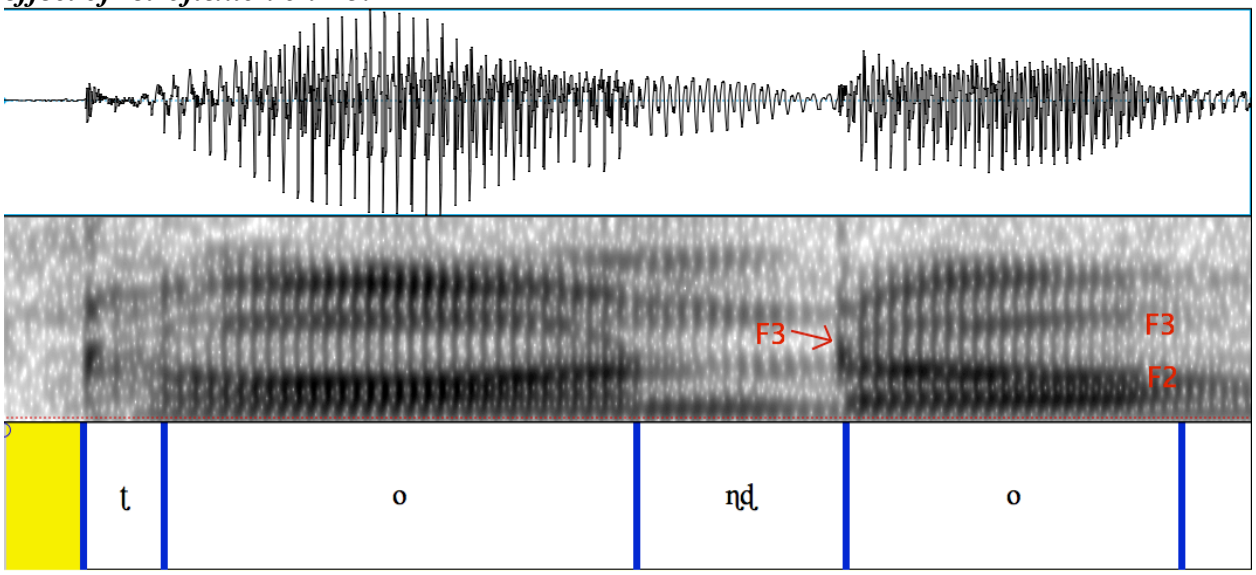



***Figure 3 (above): Waveform and Spectrogram for [ndoni]***
***Figure 4 (below): Waveform and Spectrogram for /nʈonɖo/ > [tonɖo]. Note the depressing effect of retroflexion on F3.***




The earliest documentation of retroflexion in SBK appears to be Crevatin (1993), which is based on field work conducted in the 1980's. Having interviewed speakers as old as 85 at the time, it seems that retroflexion would have likely been present in SBK at the turn of the 20th Century and possibly earlier. The evidence cited for retroflexion, however, is limited to the word nkondo > khondʳo ('war'). The use of the superscript [ʳ] appears to illustrate some sort of an 'r'-

like secondary articulation accompanying the [nd]. A trill-like secondary articulation is exactly what has been found in the Pitt SBK Data.

There also seems to be both inter and intra speaker variation in the articulation of both /nʈ/ and /nɖ/ in SBK. For Odden's speaker, the reflexes of /nt/ and /nd/ are both described as "retracted, sounding retroflex and resembling "r" to the point that 'elephant' sounds like [nrhembo] (in other contexts it is dental). It is, in fact, pronounced as a voiceless flap" (n.d.). While some speakers in the Pitt SBK data produce a flap-like articulation, others produce a trill-like aspiration. Given the typological rarity of these sounds, further research on their actual phonetic articulation would be worthwhile to pursue but beyond the scope of this paper.

Finally, retroflexion also occurs productively in SBK. This is illustrated in a morpho-phonological alternation that occurs with words containing the morpheme /N-/, which is used to mark adjectives belonging to Bantu Noun Classes 9 and 10. For example, the word for 'other' is /-tuhu/. When a Noun Class 9/10 prefix is attached, the /t/ is produced as a retroflex [ʈ]. In other environments, the alveolar form occurs. This alternation is illustrated in Table 9.

***Table 9: [t] ~ [ʈ] Alternation in Selected Noun Classes***

| **SBK** | **Gloss** |
|---|---|
| m̩nʈu m-tuhu | 'other person' (Noun Class 1) |
| wanʈu wa-tuhu | 'other people' (Noun Class 2) |
| cinʈu ci-tuhu | 'other thing' (Noun Class 7) |
| vinʈu vi-tuhu | 'other things' (Noun Class 8) |
| /mbwa N-tuhu/ -> [mbwa nʈuhu][15] | 'other dog' (Noun Class 9) |
| /mbwa N-tuhu/ -> [mbwa nʈuhu] | 'other dogs' (Noun Class 10) |

Having presented the diachronic data on retroflexion, we turn to the question of how it developed. The next section addresses the possibility of internal motivation by reviewing the

[15] For one speaker, this was [mbwa nɖuhu] and hence there is voicing in addition to retroflexion.

typological literature on the emergence of retroflexion. Ultimately, however, internal motivation will be concluded to be no more than a secondary factor.

## 3. A Cross-Linguistic Survey of Retroflexion

According to the World Phonotactics Database (Donohue et al. 2013), retroflex plosives are found only in 14.3% (or 542) of the 3,798 languages included. Even more rare are retroflex implosives and retroflex prenasalized stops, which we find in SBK. Table 10 below includes information on the occurrence of these sounds in the PHOIBLE (**PHO**netics **I**nformation **B**ase and **LE**xicon) database. While languages from the Indian sub-continent are well known for having multiple retroflex sounds in their consonant inventories, a language with three of the less common types of retroflex sounds such as found in SBK is extremely unusual. With only a small handful of languages known to have prenasalized retroflex stops or retroflex implosives, the SBK data raises the question of how they would develop in the first place.

***Table 10: Occurrence of Selected Retroflex Stops in PHOIBLE (http://phoible.org/)***

| Sound | Description | # of Languages | Occurrence (out of 1,010 languages) | Example Languages |
|---|---|---|---|---|
| ʈ | voiceless retroflex plosive | 79 | 7.82% | Bengali, Hindi-Urdu |
| ɖ | voiced retroflex plosive | 74 | 7.32% | Bengali, Hindi-Urdu |
| ɗ | voiced retroflex implosive | 4 | 0.40% | Somali, Ngad'a, Dan, Mambay |
| ɳʈ | voiceless prenasalized retroflex stop | 2 | 0.40% | Tiwi, Yanyuwa |
| ɳɖ | voiced prenasalized retroflex stop | 1 | 0.20% | Alawa |

In order to support a hypothesis that retroflexion developed as an internally motivated change, we would need to identify phonetically grounded reasons found in languages that have developed retroflexion. Bhat (1973), which is perhaps the most comprehensive typological

survey of retroflexion, however, argued that most cases of retroflexion are due to external rather than to internal factors. This argument is based on an examination of 150 different languages showing that this feature is geographically restricted to a handful of regions. The four regions identified include India, Australia and Southeast Asia, central Africa, and the Pacific coast of America. In addition to these four areas, three minor pockets are also identified including southern Africa, Scandinavia, and the Caucasus.

In all of these geographical areas, Bhat notes that there are at least a few genetically unrelated languages. Based on this fact, Bhat concludes that retroflexion occurs in a language either "1) through inheritance from the parent language, or 2) through contact with a neighboring language that possesses the feature through 1) or 2)" (Ibid: 42). Thus, if a language did not inherit retroflexion from its parent language, the only way in which it could have developed is through contact. This, of course, raises the question of how retroflexion would have developed in the first place in the absence of neighboring languages that possess this feature. Only four phonetic environments that can induce retroflexion were identified. They include (i.) a preceding apical tap or trill, (ii.) a following retroflexed consonant, (iii.) a following back vowel, and (iv.) implosion. Of these four environments, the first two can occur only in languages that already have at least one retroflex or rhotic[16] segment. Thus, the only way a language can innovate retroflexion due to a purely phonetic reason would be due to a following back vowel (iii.) or due to implosion (iv.).

With limited phonetic environments that can induce retroflexion, it should be no surprise that they are typologically rare and that they arise more often due to contact than as an independent innovation. Yet, the two cases identified of pure phonetic motivation, implosion and

[16] This paper takes adopts a broad definition of rhotics, which would include taps and trills.

a following back vowel, would actually apply to the retroflex implosive in SBK. Retroflex plosives and implosives emerging from dental or alveolar implosives is a widely attested change found in many languages of the Central African zone described by Bhat. Implosive stops exhibit diachronic behavior that is distinct from plosive stops. The result is many languages in the Central African zone with only one retroflex sound and the only retroflex sound being either a plosive or an implosive. This developmental path can be summarized as ɗ > ᶑ > ɖ.

Ohala (1983) proposed a phonetically motivated explanation to this by observing that a key distinction between retroflex and non-retroflex sounds is that retroflex sounds involve an enlarged oral cavity behind the point of constriction. This enlarged oral cavity makes it easier to create the high transglottal pressure differential needed to maintain voicing than for alveolar stops. The change from an alveolar implosive to a retroflex implosive or plosive can, thus, be seen as an aerodynamic strategy to maintain voicing. Likewise, the difference between a plosive and an implosive is that an implosive involves the use of an ingressive airstream mechanism creating more favorable conditions for voicing than for plosives. This would account for the change of d > ɗ in SBK. Assuming that ɗ > ᶑ / _ [V, +bk] followed this change, we would have two of the phonetic conditions described by Bhat (1973). The fact that [ᶑ] is restricted in its occurrence is evidence for the operation of phonetic constraints and tendencies in its phonological development. We, thus, have a phonetically grounded reason supported by typological evidence for the emergence of retroflexion in implosives that precede a back vowel.

Providing support for internal motivation, however, should not be seen as precluding the role of external motivation in also being involved. Hamann and Fuchs (2010) follow this perspective in their discussion of the development of retroflexion in several unrelated languages. Their study used Electromagnetic Articulography (EMMA) and Electropalatography (EPG) data

from German to show that a language currently lacking a retroflex phoneme actually has a voiced alveolar plosive that has a more retracted articulation than its voiceless counterpart. The German speakers studied also exhibited inter and intra-speaker variation in their tongue position in the production of the voiced alveolar stop phoneme. There was a greater tendency for the tongue to be retracted for /d/ preceding the vowel /u/ than for /i/. Different speakers also varied in the degree of retraction. While they make it clear that they are not arguing that German is on its way to developing a retroflex phoneme, they argue that the seeds for such a change are universally present in the way that voiced alveolar stops are articulated. The difference between an alveolar and a retroflex sound can be seen as a difference based along a continuum with sound change possible in either direction. Even if there are certain developmental tendencies, there still needs to be a trigger in pushing the change to take place on a community level. Thus, even if they have successfully identifed phonetic motivation for the development of a voiced retroflex plosive from a voiced alveolar plosive as in the case of three unrelated languages (Dhao, Thulung, and Afar), they state that "sociolinguistic factors are the driving force in sound changes ... A continuous updating of our pronunciation according to the input we receive is actually happening all the time and leads to small but noticeable changes in our sound system" (Hamann and Fuchs 2010:202–203).

Although Hamann and Fuchs (2010) do not explicitly talk about contact, their discussion of sociolinguistic factors as the driving force in sound change implicitly makes room for contact. Their perspective essentially complements Thomason and Kaufman (1988) argument for the primary importance of external factors in language change. Thus, while evidence has been presented suggesting the possibility of internal motivation in the development of a retroflex implosive in SBK, there still needs to have been a trigger. If the retroflex implosive developed

purely due to internal motivation, we would expect it to have developed in both TZ and SBK. This, however, is not the case. Since retroflex sounds developed only in SBK, we would need to investigate the languages that came in contact with Kizigua in Somalia. It does not seem to simply be a coincidence that more languages with retroflex sounds are spoken in Somalia than in Northeastern Tanzania. Even though there are also internally motivated reasons for retroflexion of /d/ and /ɖ/, contact would have initially been responsible for triggering the change.

Finally, for nt > nʈ and nd > nɖ, there is a lack of research showing how these changes could develop due to pure phonetic motivation. There are, of course, very few attested cases of the diachronic retroflexion of prenasalized stops. The most notable documented case is Northern Swahili. According to Nurse (1985), contact between the ancestor of Northern Swahili and Cushitic languages in Somalia led to the borrowing of loan words with dental stops. This triggered subsequent phonological changes. Retroflexion of prenasalized alveolar stops was one of these changes. Nurse and Hinnebusch (1993) describes this change as motivated by perceptual reasons related to the difficulty in perceiving a contrast between dental and alveolar segments. Both *nt and *nd retroflexion also occur in various Bantu languages spoken in the Comoros Islands and in these cases retroflexion developed through contact with the ancestor of Northern Swahili. Although the perceptual enhancement of a phonological contrast could be described as an internally motivated change, retroflexion of prenasalized stops would not have occurred in Northern Swahili if it had not borrowed dental phonemes from Cushitic languages. Thus, from this perspective, it is not a change due to pure internal motivation but rather one triggered by another change that was clearly contact-induced. For the SBK case, there is no evidence for the borrowing of dental phonemes. Instead, retroflex prenasalized stops would have developed

through contact with Northern Swahili, which happens to be one of the few languages in the world that developed these sounds.

Having shown little support for internal motivation except as a secondary factor, the next section moves on to explore external factors. More specifically, it will lay the necessary socio-historical background needed to show how retroflexion developed from contact with Northern Swahili.

## 4. The Socio-historical Background

### *4.1: General Historical Overview*

The social history of the Zigua people is characterized by two major periods of migration within the past two centuries. The first involved migration from Tanzania to Somalia in the 19th Century while the second involved fleeing away from Somalia at the outbreak of the Somali Civil War in the 1990's. These two migrations would have also corresponded to two different periods of major contact-induced changes in Kizigua.

The global context behind the first migration from Tanzania to Somalia was the East African Slave Trade. Although not as well studied as the Atlantic Slave Trade, the East African Slave Trade still played a very important role in the economy of the Indian Ocean region, which was largely controlled by Arab traders in the 19th Century. Even prior to this time period, the practice of slavery had been an important part of many African and Arab societies for centuries. In Somalia, some of the more common occupations for slaves included domestic labor in coastal cities, pastoral work, and agricultural work (Declich 2003). *Marronage*, or the running away of slaves from their masters, was a common occurrence. As will be shown, it also created unique historical conditions that would lead to the development of a new dialect of the Zigua language.

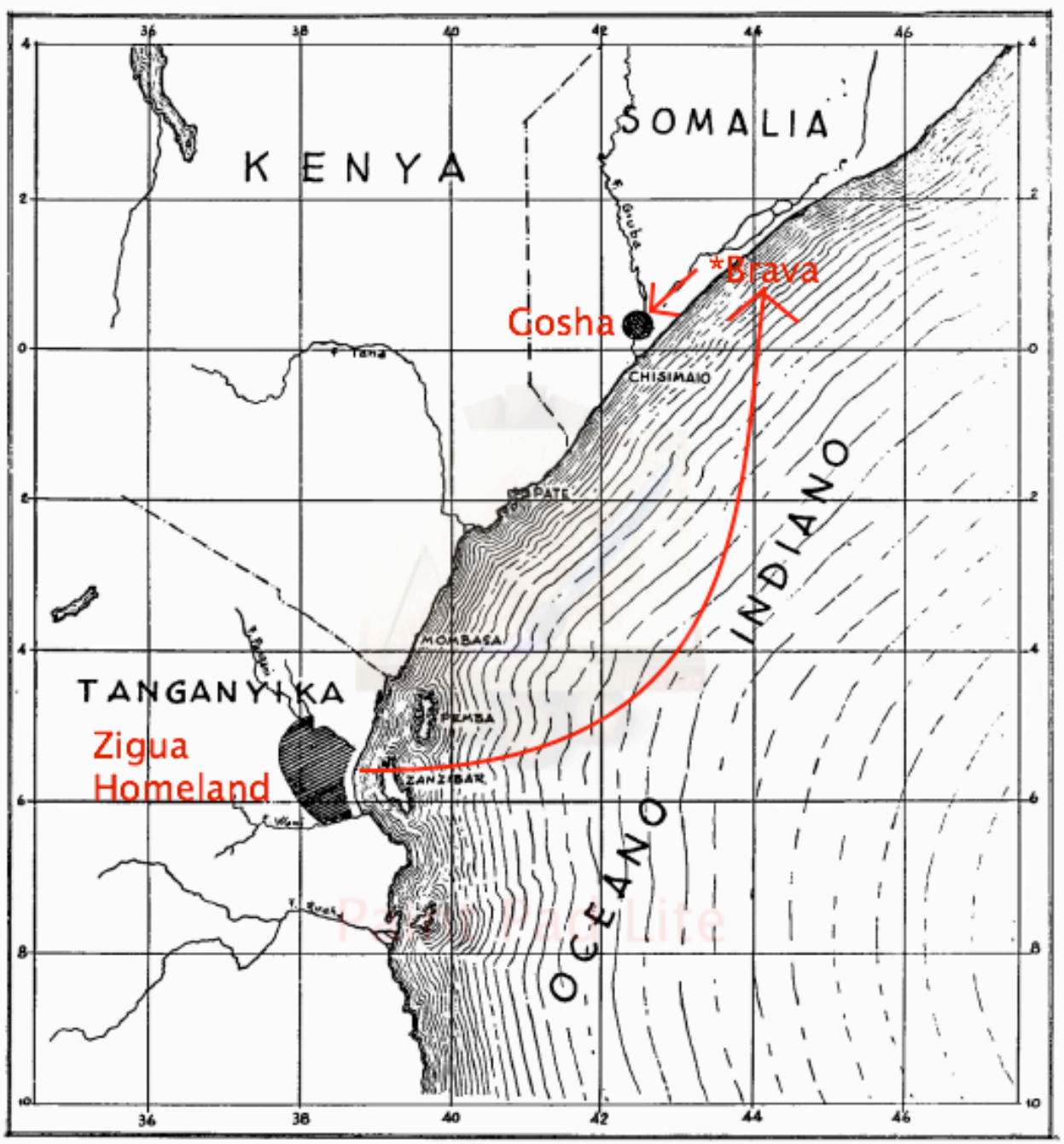



***Figure 5: Map showing the origins of the Zigua in Northeastern Tanganyika (present-day Tanzania) and their subsequent settlement along the River Juba (Giuba) near the Port City of Chisimaio (Kisimayo). Original map from Grottanelli (1953), distributed under the Creative Commons Attribution 3.0 License, annotated in red by Holman Tse.***

Grottanelli (1953) dates the earliest arrival of the Zigua in Somalia to the late 18th Century. While initially small in number, these first Zigua slaves eventually escaped from their

masters and settled in a forested area in the Juba River Valley in Southern Somalia. This area became known as Gosha (from the Somali word for "forest") and a safe haven for other fugitive slaves from diverse tribal backgrounds who would later join this maroon community. The first major migration to Somalia, however, appears to have been precipitated by a drought and famine in Tanzania that began in 1836 (Declich 1995). According to Eno and Eno (2007), Arab-Omani traders took advantage of this environmental disaster by luring the Zigua to Somalia and promising them the opportunity to work on fertile land. Instead of being offered wage labor, however, they were tricked into slavery and forced to work on commercial plantations. Some Zigua also desperately sold themselves into slavery. Whatever their exact circumstances were, many found the means to escape and headed southward by foot. According to estimates cited by Eno and Eno (2007), over 20,000 slaves escaped from their masters between 1865 and 1895. The fugitive slaves found their way to Gosha where they joined others who had already settled there. As rumors of Gosha spread across the region, more and more slaves became aware of this safe haven and sought to escape to this destination. This contributed to the growth of Gosha as an alliance of fugitive slaves from different Bantu ethnic groups. This maroon community was even recognized at one point by both the British and Italian governments and thus became a de facto "republic of free ex-slaves" (Declich 1995:96).

After the disestablishment of Gosha around the turn of the 20th Century, Italy colonized the region until the end of World War II. This brought the end of slavery. Somalia then became part of a British protectorate until it gained independence in 1960. Even with the disestablishment of Gosha, the Zigua remained relatively stable throughout this entire time period. This situation did not change significantly until the 1990's when the Somali Civil War began. This forced the Zigua as well as members of other oppressed minority groups to move out

of the country and to UN refugee camps across the border in Kenya. From Kenya, some of the Zigua were able to resettle in their ancestral homeland in Tanzania while others resettled elsewhere including the US, which accepted a total 12,000 Somali Bantu refugees.

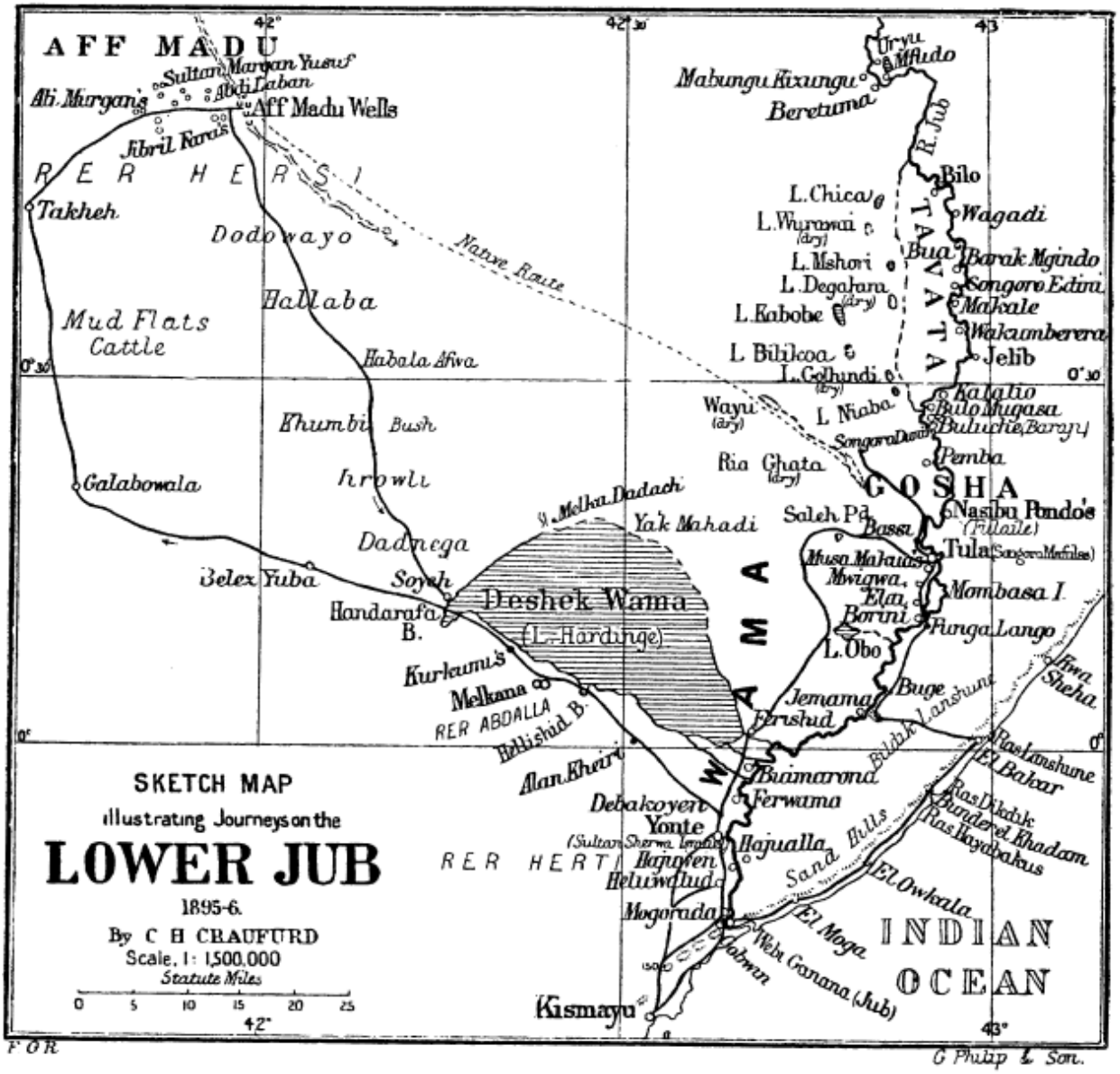



***Figure 6: Map showing location of Gosha on the right along the River Juba north of Kisimayo. Source: Craufurd (1897), http://www.jstor.org/stable/1773643***

Although there has been quite a bit of political instability in southern Somalia during the past two centuries, it should be emphasized that the Zigua were relatively stable during most of

this time period. Once they had settled down in Gosha, they remained in the Juba River Valley area up until the outbreak of the Somali Civil War. The two major periods of social change that would have also likely corresponded to major linguistic changes were the few decades following arrival in Somalia and the Somali Civil War.

One major sociolinguistic difference between these two periods is the influence of the Somali language. Once the Zigua escaped to Gosha, they distanced themselves as much as they could from ethnic Somalis for more than a century. British travelers in the 1890's described the people of Gosha as "warlike, and, besides fighting among themselves, show a bold front to their Somal [sic] enemies" (Craufurd 1897). Even after the disestablishment of Gosha, the Zigua continued to defend themselves against Somali nomads who would periodically attack them. They were generally quite successful in doing so and at one point even received firearms from the Sultanate of Zanzibar to protect themselves (Menkhaus 2003). The Zigua's isolation from ethnic Somalis persisted for more than a century. Crevatin (1993) presents linguistic evidence of their isolation by mentioning the lack of loan words from Somali and the fact that it was quite common to find people who had minimal or no knowledge of Somali in many Zigua villages during the 1980's.

The period around the outbreak of the Somali Civil War appears to have been quite different. Unlike the pre-Civil War situation during which proficiency in Somali was not very common, all of the speakers whose interviews contributed to the Pitt SBK Data are at least somewhat proficient in Somali as well as in Af-Maay, Standard Swahili, and English. All of them grew up around the time of the outbreak of the Civil War in the 1990's. They also expressed conscious awareness of generational differences in how their language is spoken. For example, younger speakers reportedly use more loanwords from English and Somali than do

older speakers. It is also possible that language standardization following Somali independence may have contributed to wider adoption of the language, though the evidence suggests this would have been a gradual process met with resistance.

The implication of this generational shift is that contact-induced changes that could be attributed to Somali would more likely be recent changes rather than changes that took place further back in history. Retroflexion, however, was universally present among all of these speakers and also occurred in Crevatin's data from the 1980's. Thus, it appears that retroflexion would have been an older change that developed in the decades following arrival in Somalia and would have been due to contact with languages other than Somali.

### *4.2: The Linguistic Consequences of the First Migration from Tanzania to Somalia*

The decades following arrival in Somalia were a very unstable period for the Zigua and can be characterized as a period of contact with many different ethnic groups who also spoke many different languages. Not all of these forms of speech, however, had equal status. In this section, I propose based on available historical evidence that one language may have been more influential than others in the phonological development of SBK. This language would have been Chimwiini, a dialect of Northern Swahili.

Chimwiini was the primary language of the port city of Brava (also known as Barawa or Mwiini), where the Zigua and many other Bantu slaves arrived when they first entered Somalia. It had served as a lingua franca for many centuries and was also spoken in some agricultural areas immediately outside the city. Nurse and Hinnebusch (1993) have described Chimwiini as unique among Swahili dialects and as a phylogenetic anomaly compared to many neighboring Bantu languages. On the one hand, Chimwiini preserves conservative features found in Proto-Bantu such as having nasals preceding voiceless stops (ex: /mp$^h$, nt$^h$, nk$^h$/). This is a feature that

TZ also coincidentally shares. On the other hand, Chimwiini also diverges from neighboring Northern Swahili dialects in adopting innovations from Southern Swahili dialects. This was made possible by the seafaring culture of East Africa, which brought the people of Brava in frequent contact with people from distant port cities such as Zanzibar, where Southern Swahili is spoken. Chimwiini also appears to have been influenced by Cushitic languages that were also spoken in the city such as Af-Maay and the Tunni dialect of Somali (Henderson 2010).

The time slaves spent in and around Brava, however, was generally short and rarely lasted a lifetime (Eno and Eno 2007). The harsh treatment they received encouraged many of them to rebel and to escape to maroon communities such as Gosha. The linguistic implication of short periods of servitude would have been a lack of sufficient time for significant structural changes to occur in the Kizigua language while the Zigua were in Brava. Once they settled down in Gosha, however, their longer presence in this maroon community would have given more than sufficient time for structural changes to occur in the language.

In Gosha, the Zigua encountered two major groups including (1) indigenous groups who were already present in Southern Somalia at the time of arrival and (2) fugitive slaves from other ethnic groups. According to Crevatin (1993), the indigenous groups that the Zigua encountered included speakers of Cushitic languages such as the Boni (aka Aweera) and the Oromo (aka Galla). Indigenous Bantu groups included the Bajuni and the Pokomo.

One question to ask is whether or not the Zigua learned any of the languages spoken in either Brava or in Gosha. Menkhaus (2003) makes a very important insight relevant to addressing this question. He says, that after a generation in Somalia, most Bantu ethnic groups lost their native language. The Zigua, however, were an exception because “unlike most of the East Africans sold into captivity in Somalia, the [Zigua] were not children, but adults”

(Menkhaus 2003). These other East African groups would have included the Yao, the Makua, the Ngindo, and the Nyasa, all from present-day Mozambique and speakers of Bantu P-Zone languages.

Some of the oral histories of the Zigua collected by ethnographers have also included explicit discussion of language use and language attitudes. For example, Declich (1995) mentions the story of a Gosha chief named Mabuluko who actively discouraged Makua fugitive slaves from speaking the Makua language. This is in contrast to Zigua leaders who were more determined to preserve their cultural traditions and language. Thus, it was more than simply about age differences that led to the maintenance of Kizigua and the loss of other Bantu languages. There were also conscious metalinguistic choices made.

If the Makua and other non-Zigua Bantu groups stopped speaking their ancestral languages, the question to ask would be what language or languages did they shift to. If many of them were children in Brava, they would have likely learned one, two, or all three of the languages spoken there. This would have included Chimwiini, Af-Maay, and the Tunni dialect of Somali. Declich (1995) mentions Af-Maay as the language currently spoken by their descendants. Thus, Af-Maay must have been at least one of the languages that these children learned. Given their diverse origins, Chimwiini may have emerged as a lingua franca used among slaves from different Bantu groups to communicate with each other. Since it is a Bantu language, it would have also been relatively simple for adults to learn. The historical evidence explicitly confirming the use of Chimwiini among the Bantu slaves, however, is lacking. The problem appears to be the failure of many historical sources in distinguishing between different Bantu languages as finely as linguistic research has. This problem, however, could simply have been a reflection of the relatively close affinity that slaves from different Bantu groups had with

each other compared to their relationship with Cushitic speaking groups as Declich (2003) mentions. If this happens to be the case, then this would simply mean that different Bantu languages were not clearly distinguished by historic sources because the Bantu speaking slaves were able to communicate with each other due to the similarity between their different languages. Chimwiini would have also been similar. In this case, this would actually lend support to the claim that the Bantu slaves found a way of communicating with each other and that the common code would have been Chimwiini.

The acquisition or learning of Chimwiini, however, would have been only the first step in a two-step process of language shift over time. The second step would have been shift from Chimwiini to Kizigua, which would have introduced substrate features from Chimwiini to Kizigua. Intermarriage between the Zigua and other Bantu groups in Gosha likely played a major role in facilitating this. While the actual frequency of intermarriage is unknown, it is clear that it happened more often than intermarriage between the Zigua and Cushitic groups. Linguistic evidence for intermarriage can be found in kinship vocabulary. The word for "older brother" in SBK is [aɓoɓo] while the word for "older sister" is [aɓajo]. These are very different from TZ but very similar to the Northern Swahili words, which are [abawa] and [abbowe] respectively, both of which appear to be loans borrowed centuries ago from an unknown Cushitic language (Nurse and Hinnebusch 1993). Intermarriage also took place with some of the indigenous communities who lived in the Gosha area (Eno and Eno 2007). This may have included the Boni, the Oromo, the Bajuni, and the Pokomo.

Although Kizigua was clearly established as the predominant language of Gosha, social prestige may have also played a role in spreading substrate features from Chimwiini. Nassib Bundo, one of the early leaders of Gosha, may have been partly responsible for this. According

to a historical narrative discussed by Declich (1995), Nassib Bundo was born a slave with Yao origins and lived in Brava for the first 20 years of his life before escaping to Gosha. If he grew up in Brava, he likely acquired Chimwiini as a child. With his political status as leader of Gosha, his speech may have had a major influence on the speech of all Gosha residents. Thus, if he spoke in Kizigua, he would have likely spoken it with Chimwiini-influenced features that may have spread across the community.

To summarize this sub-section, the Zigua were successfully able to maintain their language while other Bantu slave groups that arrived in Somalia were not. These other slave groups likely acquired Chimwiini, the language of Brava, which was the city where they first arrived in Somalia. Once they escaped to Gosha, some of them intermarried the Zigua. This and social prestige may have led to the introduction of Chimwiini substrate features into Zigua.

## 5. A Synthesis and a Contact-Induced Account for the Emergence of Retroflexion

While the previous section built a case for Chimwiini as the language that may have been the most influential in the phonological development of SBK based on socio-historical evidence, this section brings linguistic evidence into the picture and synthesizes information previously presented. Two possible scenarios will be discussed to explain how retroflexion might have been transferred to Kizigua from Chimwiini. The first is based on borrowing while the second is based on shift-induced interference.

### *5.1 Linguistic Evidence for Contact with Chimwiini*

Table 11 below is a list of languages with available documentation that appear to have been in contact with Kizigua in Somalia. The languages included are grouped by language family and by sub-family. For the Bantu languages listed there is an additional sub-grouping

based on Guthrie's (1967) classification system, which assigns a letter code to each sub-group. Information about whether or not retroflex implosives or prenasalized retroflex stops are found in the phonemic inventory of each of these languages is also included.

***Table 11: Coronal Stop Inventory of Contact Languages***[17]

| **Language** | **Family** | **Voiceless Retroflex Sounds** | **Voiced Retroflex Stops** | **Coronal Implosives** | **Source** |
|---|---|---|---|---|---|
| Af-Maay | Cushitic | -- | -- | **ɗ** | (Paster 2006) |
| Aweera (Boni) | Cushitic | -- | -- | **ɗ** | (Nurse 1985) |
| Oromo | Cushitic | -- | -- | **ɗ** | (Gragg 1982) |
| Somali – Standard | Cushitic | -- | -- | **ɗ** (in the 19th century) | (Saeed 1999) |
| Somali – Tunni Dialect | Cushitic | -- | -- | -- | (Tosco 1997) |
| Northern Swahili – Bajuni (Tikuu) Dialect | Bantu G Zone | -- | **nd$^{r}$** | -- | (Nurse 1985) |
| Northern Swahili – Chimwiini (Barawa/Brava) Dialect | Bantu G Zone | **nt$^{h}$** | **nd$^{r}$** | **ɗ** | (Nurse and Hinnebusch 1993) |
| Upper Pokomo | Bantu E Zone | **nt$^{h}$** | -- | **ɗ** | (Nurse and Hinnebusch 1993) |
| Lower Pokomo | Bantu E Zone | **nt$^{h}$** | -- | **ɗ** | (Nurse and Hinnebusch 1993) |
| Makua | Bantu P Zone | ʈ (some dialects) | **ndr** | -- | (Maples 1879; Kröger 2005) |
| Yao | Bantu P Zone | ʂ | -- | -- | (Sanderson 1922) |

Of all the languages listed in Table 11, Chimwiini turns out to have a consonant inventory that is the most similar to SBK. First of all, unlike Cushitic languages, Chimwiini and other Bantu languages have prenasalized stops. Chimwiini can be distinguished from the P-Zone

[17] Original transcriptions are used. The description of /nt$^{h}$/ in Northern Swahili mentions that they are post-alveolar with some retroflexion in some dialects (Nurse 1982). For the purpose of this paper, I assume that /nt$^{h}$/ and /nd$^{r}$/ are phonetically similar to SBK /nʈ/ and /nɖ/.

languages that non-Zigua slaves spoke by having both implosives and prenasalized stops. Also, unlike the Bajuni dialect, Chimwiini has both a voiceless and a voiced prenasalized retroflex stop. While descriptions of the language do not include a retroflex implosive, it does have a coronal implosive. SBK could have developed [ɗ] through contact with Chimwiini while the retroflex variant may have subsequently developed in SBK. Nurse (1982) has also described a morpho-phonological alternation that occurs generally across Northern Swahili dialects that looks strikingly similar to the one described for SBK in Table 9. It involves aspiration of all voiceless stops when the Noun Class 9/10 morpheme, /N-/ is attached. The aspirated /$t^h$/, which would correspond to /$nt^h$/ in Chimwiini, is also described as post-alveolar or retroflex in some dialects.

Although I argue that Chimwiini may have been the most influential language in the development of SBK, the potential influence of other languages cannot be completely ruled out. For example, we know there was contact and intermarriage between the Zigua and some of the Cushitic groups such as the Oromo and the Aweera. The role that these languages might have played would have been in increasing the frequency of occurrence of [ɗ] and [ᶑ] in the local environment. This may have further driven the sound change of d > ɗ / _ [V, -bk] and of d > ᶑ / _ [V, +bk] that may have also developed under the influence of Chimwiini. Although the potential influence of these Cushitic languages would be difficult to completely rule out, their influence would have been relatively minor and secondary compared to the greater potential role that Bantu languages would have played overall. The greater importance of Bantu languages, I argue, was not simply about greater social interaction and cultural affinity but also about greater linguistic similarity. For instance, only in Bantu languages do we find prenasalized stops. Thus, even if Cushitic languages may have played a role in introducing a coronal implosive into

Kizigua, they could not have introduced prenasalized retroflex stops because these languages do not have such sounds.

As Law (2013) has shown for Lowland Mayan languages and as Mithun (2013) has shown for Tuscarora, contact with genetically related languages can facilitate changes that would otherwise be much less likely to occur in the case of unrelated languages such as transfer of bound morphemes. This is made possible through the process of *interlingual identifications* (Weinreich 1953). By being familiar with multiple codes, multilingual speakers are able to identify points of similarities between two or more languages to establish equivalent meanings. Although Weinreich (1953) believed that genetic relatedness is immaterial to transfer and that structural similarity is what essentially matters, Law (2013) argues that genetically related languages are much more likely to have etymological similarity in addition to structural similarity. With a greater number of similar structures and lexical items, speakers of related languages have significantly more points of similarity that can potentially be conflated. Thus, while the similarity in phonological structure between Chimwiini and SBK may have initially been an accidental fact, this accidental fact would have also facilitated transfer of retroflexion from Chimwiini to SBK in a way that would not have been possible for any of the Cushitic languages.

To illustrate how exactly this might have happened, I present two hypothetical scenarios in 5.2 and in 5.3. For the sake of simplicity, the focus will be on the prenasalized stops. What is most crucial to the overall argument of this paper is how contact-induced change can lead to an outcome that appears on the surface to be the result of internal motivation.

*5.2 A Borrowing Hypothesis*

Under the Borrowing Hypothesis, native Kizigua speakers would have been the primary agents of change. The borrowing of loanwords from a related language especially a large number of them could easily give the appearance of an internally motivated sound change if the words differ only in the pronunciation of one segment. This hypothesis, however, runs into problems. Table 12 includes Chimwiini words along with their corresponding forms in TZ and SBK.

***Table 12: Correspondences with Kizigua-Chimwiini Prenasalized Stops***

| **TZ** | **SBK** | **Chimwiini**[18] | **Gloss** |
|---|---|---|---|
| nkonde | konɖe | ikonɖe | 'fist' |
| nkonde | honɖe / ɢonɖe | honɖe | 'cultivated field' |
| -nkundu | -hunɖu | -huːnɖu | 'red' |
| nkondo | ɢonɖo | nkonɖo | 'war' |
| kenda | cenɖa | kenɖa | 'nine' |
| matunda | matunɖa | matuːnɖa | 'fruit' |
| ntembo | nʈembo | teːmbo | 'palm wine', 'elephant' |
| kintu | cinʈu | cinʈu | 'thing' |
| mntu | ɱnʈu | munʈu | 'person' |
| ntondo | nʈonɖo | (noota) | 'star' |

While some of these words differ in only one segment, not all of them do. Furthermore, there are also words in Kizigua that have a prenasalized retroflex stop that lack a corresponding cognate in Chimwiini such as the word for 'star'. For this reason, the borrowing of loan words, which is often described as the starting point for loan phonemes to enter a language in the case of contact between unrelated languages, does not seem to be a completely adequate explanation for how retroflexion could have been transferred to Kizigua. This explanation would fail to account for why words in SBK that do not have corresponding cognates in Chimwiini would still end up with a prenasalized retroflex stop.

[18] The Chimwiini data comes from combining Nurse and Hinnebusch (1993) and Kisseberth and Abasheikh (2004). Original transcriptions have been converted to IPA.

A better borrowing-based hypothesis would be one based on interlingual phonetic substitution through interlingual conflation (Law 2013). This is a mechanism that seems to be more likely possible in cases of contact between related languages. Nurse and Hinnebusch (1993:269) have observed interlingual substitution in their work with speakers of various Northern Swahili dialects. For example, speakers of the Bajuni dialect are conscious of a sound correspondence between /c/ in their dialect and /tʰ/ in Standard Swahili. Although /tʰ/ is found in the Bajuni phoneme inventory, Bajuni speakers substitute /tʰ/ found in modern loanwords borrowed from Standard Swahili with /c/. Some examples of this include the Standard Swahili words for 'boat', 'tape', and 'team', which are /boti/, /tʰepu/, and /tʰimu/. In Bajuni, however, they are pronounced as /boci/, /cʰepu/, and /cʰimu/. This pronunciation does not reflect the lack of /tʰ/ in Bajuni, but rather conscious knowledge about how Bajuni and Standard Swahili are systematically related through sound correspondences that developed diachronically.

The change could have been initiated by native Kizigua speakers upon having contact with Chimwiini speakers in Somalia. The cultural similarities between Chimwiini and Kizigua speakers probably created more positive social relations than between Kizigua and Somali speakers. The linguistic similarities would have also facilitated acquisition of Chimwiini or at least made possible passive understanding of the language. When learning to communicate with Chimwiini speakers, Kizigua speakers may have learned that [nt] and [nd] in TZ correspond to [nʈ], and [nɖ] respectively in Chimwiini.

### *5.3 A Hypothesis Based on Shift-Induced Interference*

Although the first generation of native Kizigua speakers in Somalia may have played a role in the phonological development of retroflexion through interlingual substitution, their use of the retroflex variant may have been sporadic. Non-native speakers of Kizigua who spoke

Chimwiini, on the other hand, would have more likely been systematic and consistent in interlingual substitution. The possibility that they may have played a role would be a hypothesis based on shift-induced interference. This hypothesis finds historical support and would also be one that would better account for an across-the-board change affecting all instances of inherited /nt/ and /nd/.

Going back to Section 4, Menkhaus (2003) made an important observation about a major social distinction between the Zigua and the non-Zigua Bantu slaves in Somalia. The Zigua were all adults while slaves from other Bantu groups included children. The linguistic implication of this is that shift from other Bantu languages to Kizigua would have been more likely and more common than Kizigua speakers learning to speak another Bantu language. This historical evidence, however, also suggests that the role that the non-Zigua slaves might have played was a two-step process. The first step would have been the non-Zigua Bantu slaves arriving in Brava and acquiring Chimwiini while the second step would have been fleeing to Gosha and shifting to Kizigua. Nassib Bundo, of course, is an example of a former slave with Yao origins who did just this and who spent his entire childhood in Brava before fleeing to Gosha where Kizigua dominated. As we know from oral histories of the region, the languages spoken by the non-Zigua Bantu slaves were discouraged from being used. Thus, if Nassib Bundo did not promote the use of Yao or Chimwiini, he may have spoken to people in Kizigua with Chimwiini-influenced retroflexion. This would have included categorical substitution of Kizigua /nt/ and /nd/ with retroflex variants as found in Chimwiini.

We also know that there was intermarriage between the Zigua and other Bantu groups. This would have likely meant that many adults from other Bantu groups also learned Kizigua in Gosha and that they would have also spoken Kizigua with Chimwiini-influenced retroflexion.

Furthermore, Nassib Bundo's status as a leader of Gosha could have also meant that retroflexion in his speech may have gained social prestige. Nurse (1982) has mentioned that retroflexion of /nd/ is a salient feature among speakers of Northern Swahili in recent times. If this is the case, it may have likely also been a salient feature in the 19th Century and its salience may have facilitated its spread. This population would have then passed along the retroflex pronunciations of Kizigua words down to their children. The pronunciation would have also been able to diffuse across the community for subsequent generations of Kizigua speakers regardless of their ancestral origins.

The advantage of the shift-induced hypothesis is in accounting for an across-the-board sound change. Non-native Kizigua speakers would have been more likely than native Kizigua speakers to categorically replace all instances of /nt/ and /nd/ in Kizigua with /nʈ/ and /nɖ/ as found in Chimwiini even in cases in which the /N-/ noun class marker is attached to words beginning with /t/. This would account for why retroflexion of prenasalized stops is limited to inherited vocabulary. While phonetic reasons may have also led to a tendency to pronounce /ɗ/ as [ɖ] when preceding back vowels, contact with speakers of Chimwiini would still have been the initial trigger in initiating the change of d > ɖ/ _ [V, +back]. Although Chimwiini may have had the greatest influence given its lingua franca status, other languages may have also been involved in strengthening the presence of retroflexion such that it is not a marked sound in the local geographical environment. What is most crucial to the overall argument of this paper is that we do not need to resort to an explanation based on internal motivation to account for an across-the-board sound change if we consider shift-induced interference a possibility.

## 6. Conclusion

This paper began by presenting the typologically unusual coronal stop inventory of SBK. Evidence was presented showing how retroflexion developed some time in the past two centuries. Previous cross-linguistic research on the diachronic emergence of retroflexion was reviewed showing a limited number of phonetic environments that can induce retroflexion such as a following back vowel, which would be applicable to the /ɖ/ found in SBK. Nevertheless, internal motivation was argued to be a secondary factor while contact was argued to be the primary driving force behind the development of the entire retroflex stop inventory. The history of the Zigua people in Somalia was reviewed showing a very complex contact situation. In spite of this complexity, Chimwiini, as a lingua franca, was argued to have been the most influential language in the phonological development of SBK. A scenario based on shift-induced interference was presented as one better than a scenario based on borrowing in accounting for both the linguistic and socio-historical facts. This paper concludes by having providing much stronger evidence for a contact-induced explanation than one based on internal phonetic motivation in the development of retroflexion in SBK. By discussing the diachronic development of a typologically rare set of sounds, this paper has provided support for Thomason and Kaufman's (1988) proposed paradigm shift for historical linguistics by highlighting the importance of exploring external factors even for cases that appear to be due to internal motivation on the surface.

More research needs to be done on the history of contact with different groups in Southern Somalia. More data on these languages would also be helpful. There are still many gaps in the historic record and in the linguistic data that could shed much light about what happened. Unfortunately, the Civil War in Somalia has made this task increasingly difficult and has led to the endangerment of many of the Somali Bantu languages including Chimwiini (Nurse

2010). For the time being, this paper has presented the basic facts about an unusual case of retroflexion as well as an under researched case of language change in the context of a pre-colonial history of migration. There is sufficient evidence to show the primary role of external motivation in initiating the emergence of retroflexion in SBK. Furthermore, the fact that the pattern is still highly systematic raises an intriguing question for future research in historical linguistics about whether other cases previously thought of as due to internal motivation may have actually been due to shift-induced interference from groups who speak languages for which we lack available documentation. Thomason and Kaufman (1988) mention a big gap in our knowledge of shift-induced interference due to the lack of historic documentation of languages spoken by groups prior shifting to another language. For the SBK case, however, we have sufficient evidence showing language shift as well as documentation about the original languages spoken by the speakers that shifted. The similar linguistic outcomes that can result from both shift-induced interference and internally motivated across-the-board sound change should encourage historical linguists to consider the possibility of shift-induced interference in other cases.

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